

DOES ARENARIA RUBELLA OCCUR ON THE BRUCE PENINSULA OF ONTARIO?

J. K. MORTON

Krotkov (1940) reported the discovery of *Arenaria rubella* (Wahlenb.) Sm. on the limestone cliffs above Driftwood Cove on the northern shores of the Bruce Peninsula. The record was published under the name *A. verna* var. *propinqua* Fern., a taxon currently referred to *A. rubella* (Fernald, 1950) or *Minuartia rubella* (Wahlenb.) Graebn. (Hultén, 1968) depending on the interpretation of the limits of the genus *Arenaria*. This record is taken up in the recent checklist of the flora of the Bruce Peninsula (Shivas et al., 1969) and by Hultén (1968). This record, if correct, is of interest because the Bruce Peninsula lies far south of the main area of distribution of this species in the arctic lowlands of North America (see map in Hultén, 1968). The species also occurs in eastern North America in isolated stations in Québec (on the south side of the St. Lawrence) and in northern Vermont.

The record of the existence of this species on the Bruce Peninsula is based on two specimens in the herbarium of the University of Toronto — *Krotkov*, 7415, collected in August 1933 and determined by Fernald in that year, and 9012, collected in August 1934 and determined by Krotkov. I examined this material a year or two ago and concluded that it was probably more correctly referable to *Arenaria stricta* Michx., but both specimens are small and probably fairly young stunted plants, which made me hesitant in my determination. This summer I visited Driftwood Cove where a study of the living plants, which are common on some parts of the limestone cliff top, confirmed my identification. Added confirmation came from a chromosome count and from cultivation of material in the garden where the plants lost some, though not all, of their stunted appearance. The diploid chromosome number of *A. stricta* and of the material from Driftwood Cove is $2n = 30$. That of

A. rubella is $2n = 24$ in the many populations which I and other workers have examined from across North America.

Morphologically *Arenaria stricta* differs from *A. rubella* in having the midvein of the leaves much stronger and more conspicuous than the marginal veins, and also in having larger seeds. Also the petals are larger, broader and more conspicuous. Unfortunately, the leaf character is not wholly reliable and overlap occurs; whilst in the very dry, exposed habitat in which the Driftwood Cove plant grows, desiccation often arrests the development of the seed. In living plants the habit differences between these species are clear cut and distinct, *A. stricta* being a diffuse, loosely tufted, long-lived perennial, often forming large mats several decimetres across, whilst *A. rubella* is a densely tufted annual or short-lived perennial forming small, tight cushions from a centimetre to nearly 2 decimetres across. Under cultivation the Driftwood Cove material assumes all the above mentioned characters of *A. stricta* and unquestionably belongs to this species — a species which is common on the limestone pavements on various parts of the Bruce Peninsula. Stunted plants similar to those at Driftwood Cove occur in other exposed habitats — e.g., on Yeo Island between the Bruce Peninsula and Manitoulin Island.

LITERATURE CITED

- FERNALD, M. L. 1950. Gray's Manual of Botany. 8th ed. American Book Co. pp. 1632.
- HULTÉN, E. 1968. Flora of Alaska and Neighboring Territories. Stanford University Press. pp. 1008.
- KROTKOV, P. V. 1940. Botanical explorations in the Bruce Peninsula, Ontario. Trans. Royal Canadian Inst. 23: 1, 3-65.
- SHIVAS, M. S., M. D. KIRK, W. K. KIRKWOOD, & C. ROLFE. 1969. Check-list of Vascular Plants of the Bruce Peninsula. Federation of Ontario Naturalists. pp. 62.

DEPARTMENT OF BIOLOGY
UNIVERSITY OF WATERLOO
WATERLOO, ONTARIO
CANADA N2L 3G1